
Appendix Report Form

The report form is shown on the following pages.

FORM 94-A62
(8-17-94)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

Please mention the Census File Number (the 11-digit number in the upper left corner of the address label) if you write to us about this report.



1994 FARM
AND RANCH
IRRIGATION
SURVEY

COMPLETE
AND
RETURN
TO

Bureau of the Census
1201 East 10th Street
Jeffersonville, IN 47133-0001

(Please correct errors in name, address, and ZIP Code. Enter street and number if not shown.)

CENSUS USE ONLY	010	012	014	016	018	020	021	022
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FROM THE ACTING DIRECTOR
BUREAU OF THE CENSUS

We are asking for your cooperation in providing information for the 1994 Farm and Ranch Irrigation Survey, which we are sending to a small sample of farm and ranch irrigators.

Because of increased competition for surface water supplies and dwindling ground water reserves in some areas, there is an urgent need for up-to-date information on irrigation methods and practices. You are the only source from which all the necessary information for this significant survey can be obtained. Your report, when combined with others, is needed for us to provide totals on irrigation methods and practices in 1994.

Please fill out and return this report form within thirty days in the preaddressed envelope provided. IF EXACT FIGURES ARE NOT AVAILABLE, PLEASE GIVE YOUR BEST ESTIMATES. If some questions on the report form do not apply to your operation, please skip these questions by following the instructions on the form.

Title 13, United States Code, Section 142, authorizes the 1994 Farm and Ranch Irrigation Survey. The same law requires that you reply to this report completely and accurately and specifies that your report is confidential. Only sworn Census Bureau employees will see information reported and they will use it only for statistical purposes.

We need to receive your report. The statistical sampling procedures we follow do not allow other farms or ranches to take your place in this survey. If you have any questions about this report, call us on our toll-free number 1-800-233-6132 between 8 a.m. and 4:30 p.m. Eastern time.

Thank you for cooperating with us.

Sincerely,

Harry A. Scarr

CONTINUE ON PAGE 2 →

Item 1 – ACREAGE IN 1994

	None	Number of acres
a. All land owned	<input type="checkbox"/>	025
b. All land rented or leased from others	<input type="checkbox"/>	026
c. All land rented or leased to others	<input type="checkbox"/>	027
d. TOTAL ACRES IN "THIS PLACE" – ADD acres owned (item a) and acres rented from others (item b), then SUBTRACT acres rented to others (item c), and enter your answer in this space. →		028

Item 2 – LAND USE IN 1994

Distribute all acres in "THIS PLACE" in column (1) and all irrigated land in "THIS PLACE" in column (2) among items a through d. If the same land had more than one use in 1994, report that land only once in the first use listed below that applies.

In addition to fully irrigated land, report as irrigated any land to which partial, supplemental, or semi-irrigation was applied. Also include any acreage which received only preplant irrigation (watered before planting). Hayland, pastureland, or rangeland should be reported as irrigated if spring flood water was spread by canals, ditches, spreader dikes, pipes, or other works.

	None	Number of acres (1)	None	Number of acres irrigated in 1994 (2)
a. Cropland				
(1) Cropland harvested – Include all land from which crops were harvested or hay was cut, and all land in orchards, citrus groves, and vineyards	<input type="checkbox"/>	029	<input type="checkbox"/>	030
(2) Cropland used only for pasture or grazing – Include rotation pasture and grazing land that could have been used for crops without additional improvements	<input type="checkbox"/>	031	<input type="checkbox"/>	032
(3) Other cropland – Include cropland used for cover crops, cropland on which all crops failed, cropland in cultivated summer fallow, and cropland idle	<input type="checkbox"/>	033	<input type="checkbox"/>	034
b. Woodland – Include woodland pastured and woodland not pastured	<input type="checkbox"/>	035		
c. Other pastureland and rangeland – Include any pastureland other than cropland and woodland pastured	<input type="checkbox"/>	037	<input type="checkbox"/>	038
d. All other land – Include any land not reported above. Include land in house lots, barn lots, corrals, ponds, roads, wasteland, etc.	<input type="checkbox"/>	039		
e. TOTAL ACRES – Please sum columns 1 and 2 and enter the totals in these spaces. (Acres in "THIS PLACE" should be equal to item 1d above.) →		"THIS PLACE" 041		IRRIGATED 042
f. How many of the irrigated acres have been laser leveled?	<input type="checkbox"/>			540

Item 3 – Was any land on the farm or ranch you operated irrigated at any time in 1994?

024 1 YES – Complete items 3 through 18 and 20
 2 NO – Skip to item 19

Item 4 – METHOD OF WATER DISTRIBUTION IN 1994 – Report acres irrigated by each type of FIELD distribution or delivery system listed below. If same land was irrigated by more than one method, report acres irrigated by each method used. DO NOT report information for the delivery system used to convey water from the source to the field, instead report information for the FIELD distribution system.

	None	Acres irrigated			
		Total	Above ground pipe, including gated pipe	Open surface ditches	Under ground pipe
a. Gravity irrigation					
(1) Down rows or furrows	<input type="checkbox"/>	855	856	857	858
(2) Between borders or within basins	<input type="checkbox"/>	865	866	867	868
(3) Uncontrolled flooding	<input type="checkbox"/>	875	876	877	878
(4) Other	<input type="checkbox"/>	885	886	887	888

Item 4 - METHOD OF WATER DISTRIBUTION IN 1994 - Continued

		Acres irrigated
b. Sprinkler irrigation		
(1) Center pivot		
a. High pressure (60 PSI or greater)	<input type="checkbox"/>	570
b. Medium pressure (30 to 59 PSI)	<input type="checkbox"/>	575
c. Low pressure (Under 30 PSI)	<input type="checkbox"/>	576
(2) Mechanical-move		
a. Linear and wheel move systems	<input type="checkbox"/>	572
b. All other	<input type="checkbox"/>	573
(3) Hand move	<input type="checkbox"/>	243
(4) Solid set and permanent systems (except for low-flow micro sprinklers)	<input type="checkbox"/>	244
c. Drip or trickle irrigation, include: surface drip, subsurface drip, and low-flow micro sprinklers that apply water at a low pressure, and are not self-propelled or easily moved	<input type="checkbox"/>	248
d. Subirrigation water, maintenance of water table at a predetermined depth (excluding methods reported above)	<input type="checkbox"/>	249

Item 5 - ACRES IRRIGATED AND ESTIMATED QUANTITY OF WATER USED IN 1994 BY SOURCE

Report quantity of water in the unit or units of measure most convenient for you. If measurements are not available, give your best estimate for quantity of water used. If average acre-feet cannot be estimated, give combined pumping capacity and duration in days, or total depth of water applied.

a. Ground water from a well or wells located on this farm or another farm Acres irrigated
 Estimated quantity of water used in 1994 - Report in unit most convenient for you

- (1) Average acre-feet per acre irrigated (one acre-foot covers one acre one foot deep) /10
- OR
- (2) Gallons of water applied and duration Total gallons per minute
- OR
- No. of 24-hour day equivalents water was applied
- (3) Average inches applied - Include all applications Average inches per acre

b. On farm surface supply not controlled by a water supply organization (stream, drainage ditch, lake, pond, spring, or reservoir on or adjacent to this farm) Acres irrigated
 Estimated quantity of water used in 1994 - Report in unit most convenient for you

- (1) Average acre-feet per acre irrigated (one acre-foot covers one acre one foot deep) /10
- OR
- (2) Gallons of water applied and duration Total gallons per minute
- OR
- No. of 24-hour day equivalents water was applied
- (3) Average inches applied - Include all applications Average inches per acre

c. Off-farm water suppliers (U.S. Bureau of Reclamation; irrigation district; mutual, private, cooperative, or neighborhood ditches; commercial company or municipal or community water system) Acres irrigated

- (1) How much water was received? Total acre-feet
- (2) Total cost of water received - Include all assessments, fees, or charges paid to water suppliers \$.00 Dollars only

If water was received at no cost, check No cost

- (3) Did you allow any of your regular allocation of water to be used by others in 1994? YES - Enter number of acre-feet
- NO

Item 6 – ACRES HARVESTED AND CROP YIELDS – For each crop harvested, report separately the acreage and average yield from irrigated land and non-irrigated land.

Report harvested crops as irrigated if any water was artificially applied either before planting or during the crop growing season in 1994. Report the crop as irrigated if water was applied to supplement rainfall, even if the amount of water applied was not sufficient to obtain maximum yields.

	None	Irrigated crop Include preplant and supplemental or semi-irrigation					Non-irrigated crop		
		Irrigated acres harvested	Average yield per irrigated acre harvested	Estimated quantity of water applied per acre			Non-irrigated acres harvested	Average yield per non-irrigated acre harvested	
				Average acre-feet	or	Total inches			
a. Corn (field) for grain or seed	<input type="checkbox"/>	050	1 Bushels, shelled	2	/10	or	3	4	5 Bushels, shelled
b. Corn (field) for silage or green chop	<input type="checkbox"/>	060	1 Tons, green	2	/10	or	3	4	5 Tons, green
c. Sorghum for grain or seed	<input type="checkbox"/>	070	1 Bushels	2	/10	or	3	4	5 Bushels
d. Wheat for grain	<input type="checkbox"/>	080	1 Bushels	2	/10	or	3	4	5 Bushels
e. Barley for grain	<input type="checkbox"/>	090	1 Bushels	2	/10	or	3	4	5 Bushels
f. Soybeans for beans	<input type="checkbox"/>	100	1 Bushels	2	/10	or	3	4	5 Bushels
g. Beans, dry edible	<input type="checkbox"/>	110	1 Cwt.	2	/10	or	3	4	5 Cwt.
h. Rice	<input type="checkbox"/>	120	1 Cwt.	2	/10	or	3		
i. Other small grains (oats, rye, etc.)	<input type="checkbox"/>	130		2	/10	or	3	4	
j. Alfalfa and alfalfa mixtures for hay or dehydrating	<input type="checkbox"/>	140	1 /10 Tons, dry	2	/10	or	3	4	5 /10 Tons, dry
k. All other hay, including wild or native hay	<input type="checkbox"/>	150	1 /10 Tons, dry	2	/10	or	3	4	5 /10 Tons, dry
l. Peanuts for nuts	<input type="checkbox"/>	550	1 Pounds	2	/10	or	3	4	5 Pounds
m. Cotton	<input type="checkbox"/>	160	1 Lbs. lint	2	/10	or	3	4	5 Lbs. lint
n. Sugar beets for sugar	<input type="checkbox"/>	170	1 Tons	2	/10	or	3	4	5 Tons
o. Tobacco, all types	<input type="checkbox"/>	180 /10	1 Pounds	2	/10	or	3	4 /10	5 Pounds
p. Potatoes, Irish	<input type="checkbox"/>	190 /10	1 Cwt.	2	/10	or	3	4 /10	5 Cwt.
q. All land from which vegetables were harvested	<input type="checkbox"/>	200 /10		2	/10	or	3	4 /10	
Sweet corn	<input type="checkbox"/>	850 /10		2	/10	or	3	4 /10	
Tomatoes	<input type="checkbox"/>	860 /10		2	/10	or	3	4 /10	
Lettuce romaine	<input type="checkbox"/>	870 /10		2	/10	or	3	4 /10	
r. Berries	<input type="checkbox"/>	560		2	/10	or	3	4	
s. Land in bearing and nonbearing fruit orchards, citrus or other groves, vineyards, and nut trees	<input type="checkbox"/>	210 /10		2	/10	or	3	4 /10	
t. All other crops – Specify \nearrow	<input type="checkbox"/>	220		2	/10	or	3	4	
_____ <input type="checkbox"/>					/10	or			
u. Pastureland, all types	<input type="checkbox"/>	230		2	/10	or	3		

Item 7 - METHOD OF WATER DISTRIBUTION, IRRIGATION FREQUENCY, AND APPLICATION OF COMMERCIAL FERTILIZERS AND PESTICIDES IN IRRIGATION WATER BY SELECTED CROPS IN 1994

Pesticides include chemicals used to control insects, weeds, nematodes, and diseases. Check the appropriate box if ANY commercial fertilizers or pesticides were used on a crop, even if only a portion of the crop was treated.

Report the maximum number of times any field crop was irrigated. Include the number of preplant irrigation applications in this figure.

		Mark (X) all boxes that apply								
		Method of water distribution				Application of fertilizer or pesticides in irrigation water (chemigation)		How many times were crops irrigated?		
None		Sprinkler	Gravity	Drip or trickle	Sub-irrigation	Commercial fertilizer	Pesticide application	Less than 3	3 to 7	8 or more
a. Corn (field) for grain or seed	<input type="checkbox"/>	250 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	600 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
b. Corn (field) for silage or green chop	<input type="checkbox"/>	260 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	603 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
c. Sorghum for grain or seed	<input type="checkbox"/>	270 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	606 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
d. Wheat for grain	<input type="checkbox"/>	280 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	609 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
e. Barley for grain	<input type="checkbox"/>	290 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	612 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
f. Soybeans for beans	<input type="checkbox"/>	300 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	615 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
g. Beans, dry edible	<input type="checkbox"/>	310 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	618 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
h. Rice	<input type="checkbox"/>	320 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	621 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
i. Other small grains (oats, rye, etc.)	<input type="checkbox"/>	330 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	624 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
j. Alfalfa and alfalfa mixtures for hay or dehydrating	<input type="checkbox"/>	340 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	627 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
k. All other hay, including wild or native hay	<input type="checkbox"/>	350 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	630 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
l. Peanuts for nuts	<input type="checkbox"/>	580 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	633 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
m. Cotton	<input type="checkbox"/>	360 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	636 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
n. Sugar beets for sugar	<input type="checkbox"/>	370 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	639 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
o. Tobacco, all types	<input type="checkbox"/>	380 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	642 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
p. Potatoes, Irish	<input type="checkbox"/>	390 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	645 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
q. All land from which vegetables were harvested	<input type="checkbox"/>	400 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	648 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
Sweet corn	<input type="checkbox"/>	900 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	907 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
Tomatoes	<input type="checkbox"/>	910 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	917 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
Lettuce and romaine	<input type="checkbox"/>	920 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	927 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
r. Berries	<input type="checkbox"/>	590 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	651 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
s. Land in bearing and nonbearing fruit orchards, citrus or other groves, vineyards, and nut trees	<input type="checkbox"/>	410 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	654 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
t. All other crops	<input type="checkbox"/>	420 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	657 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
u. Pastureland, all types	<input type="checkbox"/>	430 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	660 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>

Item 10 - ENERGY USE ON "THIS PLACE" IN 1994 FOR PUMPING IRRIGATION WATER BY POWER
 SOURCE - Report the expenditures for fuel and power used in 1994 for irrigation pumping by each type of energy used on "THIS PLACE". Include in the cost figures any additional charges such as the "fuel adjustment charge" or any other type of additional charge which is based on the amount of power or fuel purchased.

	None	Number of wells or pumps powered by type of energy used	Total cost of fuel used		Acres irrigated by type of energy used
			Dollars	Cents	
a. Electricity	<input type="checkbox"/>	495	496 \$	00	497
b. Natural gas	<input type="checkbox"/>	498	499 \$	00	500
c. LP gas, propane, or butane	<input type="checkbox"/>	501	502 \$	00	503
d. Diesel fuel	<input type="checkbox"/>	504	505 \$	00	506
e. Gasoline and gasohol	<input type="checkbox"/>	507	508 \$	00	509

Item 11 - MAINTENANCE AND REPAIR COSTS FOR IRRIGATION EQUIPMENT AND FACILITIES ON "THIS PLACE" IN 1994

Report all expenses in 1994 for keeping irrigation equipment and facilities in working order. Include expenses for tune-ups, oil changes, and repairs to pumps, motors, pipes, canals, sprinkler systems, etc. Also include expenses for ditch and canal cleanout.

	None	Dollars	Cents
Amount spent for maintenance and repairs of irrigation equipment and facilities in 1994 including maintenance of on-farm ditches. Include landlord's share - Give estimate if actual figures are unavailable	682 <input type="checkbox"/>	510 \$	00

Item 12 - EXPENDITURES IN 1994 FOR IRRIGATION FACILITIES ON "THIS PLACE"

Report expenditures made in 1994 for the construction of irrigation facilities and purchase of irrigation equipment and machinery on "THIS PLACE". Include estimates of expenditures made or shared with others (landlords, government agencies, etc.). Report the cost of maintenance and repairs in item 11.

	None	Total expenditures		Purpose of expenditure Mark (X) principal purpose		
		Dollars	Cents	Replace-ment	Conser-vation	New expan-sion
a. Purchase of new or replacement irrigation equipment and machinery - Include sprinklers, pipes, siphons, nozzles, pumps, motors, engines, etc., at net cost	<input type="checkbox"/>	511 \$	00	512 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
b. New well construction or deepening of existing wells - Include drilling costs, cost of casing, and any costs to prepare well for installation of pump. (DO NOT include cost of pumps and motors.)	<input type="checkbox"/>	515 \$	00	516 1 <input type="checkbox"/>		3 <input type="checkbox"/>
c. Construction or improvement of permanent storage and distribution systems (dams, ponds, reservoirs, permanent ditches, canals, flumes, etc.)	<input type="checkbox"/>	519 \$	00	520 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
d. Land clearing and leveling for irrigation purposes	<input type="checkbox"/>	523 \$	00		524 2 <input type="checkbox"/>	3 <input type="checkbox"/>

Item 13 - IRRIGATION PRACTICES IN 1994

a. How did you decide when to apply water in 1994? - Mark (X) all that apply. ↗

- 527 1 Condition of crop (observation)
- 2 Feel of the soil
- 3 Use of soil moisture sensing devices such as moisture blocks or tensiometers
- 4 Use of commercial scheduling service
- 5 Media reports on crop-water needs (newspapers, radio, and TV)
- 6 Water delivered by irrigation organization in turn (no choice by water user)
- 7 By calendar schedule
- 8 Computer simulation models
- 9 Other - Specify _____

b. Did you have to discontinue irrigation during 1994 long enough to AFFECT crop yields?

- 669 1 YES - If "Yes", answer the following. (Mark (X) all that apply.) ↗
- 2 NO - Go to item 14
- 670 1 Shortage of surface water (water from reservoirs, lakes, streams, water supply organizations, etc.)
- 2 Shortage of ground water (lowering water level of wells or depletion of ground water)
- 3 Irrigation equipment failure
- 4 Energy shortage
- 5 Poor water quality
- 6 Loss of water rights
- 7 Cost of water
- 8 Other - Specify _____

Item 14 - OTHER USES OF IRRIGATION WATER ON "THIS PLACE" IN 1994

Was irrigation used for any of the following secondary purposes?

	None	Acres on which applied
a. Prevent freeze damage	<input type="checkbox"/>	440
b. Crop cooling to delay early budding, blooming, or to reduce heat stress	<input type="checkbox"/>	441
c. Leaching to remove salts from the soil (salinity control)	<input type="checkbox"/>	442
d. Other - land disposal of liquid livestock waste, etc. - Specify ↗	<input type="checkbox"/>	443
_____	<input type="checkbox"/>	

Item 15 - WATER MANAGEMENT PRACTICES FOR OPERATORS USING GRAVITY IRRIGATION

Did you use gravity irrigation to irrigate any land in 1994 (acres reported in item 4a)?

- 671 1 YES - If "Yes", answer the following: ↗
- 2 NO - Go to item 16

On how many acres did you use these techniques?

	None	Number of acres
a. Irrigation water captured for further use (tailwater pits)	<input type="checkbox"/>	672
b. Surge flow or cablegation technique	<input type="checkbox"/>	673
c. Shortening of furrow length	<input type="checkbox"/>	684
d. Reducing set time or irrigations (even if water has not reached the end of the rows)	<input type="checkbox"/>	685
e. Alternate row irrigation	<input type="checkbox"/>	686
f. Use of any special furrowing techniques, such as wide-spaced bed furrowing, compacted furrowing, or furrow diking - Specify technique used ↗	<input type="checkbox"/>	674
_____	<input type="checkbox"/>	

Item 16 – GOVERNMENT PROGRAMS

- a. During 1994, did you participate in any Federal commodity programs 691 1 YES 2 NO
- b. Have you made any special provisions on your farm for wildlife habitat 692 1 YES 2 NO

Item 17 – IMPROVEMENTS TO IRRIGATION SYSTEMS THAT REDUCE ENERGY AND/OR CONSERVE WATER USED IN IRRIGATION – Consider as an improvement, changes in equipment or management practices. For example – retrofitting a sprinkler system for low pressure operation or adopting irrigation scheduling as a management practice.

1a. Have you implemented improvements for your irrigation system since 1990?

- 693 1 YES – *If "Yes", go to question 1b.*
- 2 NO – *Go to question 2*

1b. What were the results of these improvements? – *Mark (X) all that apply.* ↘

- 694 1 Improved crop yield or quality
- 2 Decreased energy costs
- 3 Reduced water requirements
- 4 None of the above
- 5 More time needed to evaluate improvements

2. What are barriers to implementing improvements that might reduce energy and/or conserve water in your irrigation system? – *Mark (X) all that apply.* ↘

- 695 1 Not aware of improvements that fit my operation
- 2 Risk of reduced yield or poorer quality crop yields from not meeting water needs
- 3 Conserving water has no economic benefit
- 4 Improvement(s) will reduce costs, but not enough to cover the installation costs
- 5 Cannot finance the improvements, even if they reduce costs
- 6 Landlord(s) will not share in cost of improvements
- 7 Uncertainty about the quantity of future water rights
- 8 Other – *Specify* _____

Item 18 - SOURCES OF IRRIGATION INFORMATION

What are the sources of information that you rely on for guidance in reducing irrigation costs or to conserve water used for irrigation? - Mark (X) all that apply. ↘

- 696 1 Extension agents or university specialists
- 2 Government specialists from the Soil Conservation Service or other agencies
- 3 Irrigation equipment dealers
- 4 Local irrigation district employees or others hired by the water supplier
- 5 Private irrigation specialists or consultants hired by owner or operator
- 6 Media reports or information in the press
- 7 Neighboring farmers
- 8 Other - Specify _____

Item 19 - IRRIGATED LAND IN 1992

a. Was any land irrigated on "THIS PLACE" in 1992? DO NOT answer this item if you irrigated any land in 1994.

- 528 1 YES - Answer b and c below ↘ 2 NO - Go to item 20

b. Reasons for not irrigating in 1994 - Mark (X) any of the following that apply: ↘

- 529 1 Sufficient soil moisture - no irrigation needed
- 2 Shortage of surface water (water from reservoirs, lakes, streams, water supply organizations, etc.)
- 3 Shortage of ground water (lowering water level of wells or depletion of ground water)
- 4 Irrigation uneconomical due to high fuel and power costs and/or low commodity prices
- 5 Irrigation equipment failure
- 6 Loss of water rights
- 7 Sold water rights
- 8 Other - Specify _____

c. Do you consider your discontinuance of irrigation to be permanent?

- 530 1 YES
- 2 NO

Item 20 - PERSON COMPLETING THIS FORM - Please print

Name _____	Date _____	
Telephone _____ →	Area code _____	Number _____ - _____

NOTE - Based on tests with farmers and ranchers, it takes from 30 to 60 minutes to complete this form, with most operators completing it in 43 minutes per response. If you have any comments regarding these estimates or any aspect of this survey, send them to the Associate Director for Administration, Attn: Paperwork Reduction Project 0607-0784, Room 3104, FOB 3, Bureau of the Census, Washington, DC 20233-0001; and to the Office of Management and Budget, Attn: Paperwork Reduction Project 0607-0784, Washington, DC 20503.

WHY A FARM AND RANCH IRRIGATION SURVEY?

The purpose of this survey is to provide current data about irrigation not presently available from other sources for use by –

- Legislators and policymakers for preparing irrigation-related legislation and project funding.
- The irrigation industry in determining irrigation equipment and service needs.
- Economists and farmers in studies of the economics of irrigation.
- Planners in estimating future demands on the Nation's fresh water supply.
- Hydrologists in studies of water usage.
- Forecasters in estimating future food supplies, as well as irrigation needs.

Facts About Irrigation

1. Irrigation is one of the principal ways of growing more food on less land to help feed the world's exploding population. The world's population is expected to double from a current population of over 5 billion persons to an estimated 10 billion persons by the year 2035.

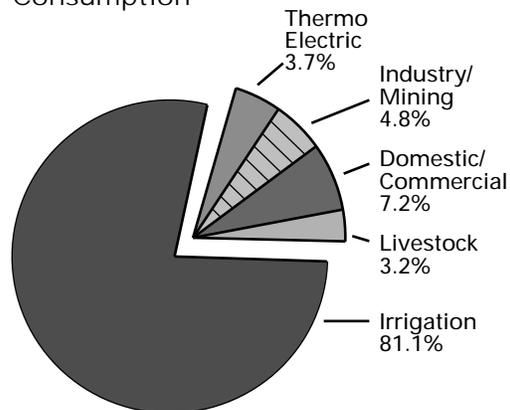
The 1987 Census of Agriculture shows that 14 percent of U.S. farms were irrigated, yet they accounted for 33 percent of the market value of all agricultural products sold and 51 percent of the value of all crops sold. Seventy-four percent of all orchard land and 64 percent of the acres of all vegetables harvested for sale were irrigated.

2. Irrigation is one of the principal uses of water in the U.S. In many areas, water is a critical factor in economic growth.

Irrigation accounts for more than 80 percent of all water consumed. The following pie chart shows the proportion of water consumed by each major use.

Future competition for scarce water, especially in the Western States, will be greater than ever. Since irrigation accounts for such a large proportion of total water consumed, national problems concerning water resources, such as allocation, conservation, and water quality, will have an impact on irrigation.

1990 Freshwater Consumption



Source: USGS Circular 1081

3. Irrigation pumping is a large energy user on the farms. In some areas, falling water tables require the water to be lifted much higher than in the past, thus requiring larger pumps and more energy to be used for pumping.

Your Response Is Confidential

Your response to this survey is required by law (Title 13, United States Code). More importantly, the same law makes your report form confidential. It may be seen only by sworn Census employees and may be used only to tabulate totals for your county, your State, and the Nation.

Do You Need Help?

Do not hesitate to contact the Census Bureau if you need more help. Please use our Toll Free number 1-800-233-6132 between 8 a.m. and 4:30 p.m. Eastern time.

Your Estimates Are Acceptable

Remember, in completing your report, that the Bureau accepts reasonable estimates if records are incomplete or unavailable.

Information To Be Published From the Irrigation Survey

The results of this survey are expected to be published early in 1996 as part of Volume 3 Related Surveys, 1992 Census of Agriculture.

Irrigation Data Will be Published By Several Geographic Levels -

By: State for each of the 27 principal irrigation States, 17 Western States, and all other States combined.

By: Each of the 18 major drainage basins (approximated on county and State lines).

Census Reports Are Widely Available

Reports will be available at many universities, colleges, public libraries, and state data centers. Publications will be sold through the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. They will also be available for review at U.S. Department of Commerce District Offices, which are located in major cities throughout the United States, and Census Bureau regional offices.

We Thank You Very Much —

for the prompt return of your completed report form.